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ABSTRACT

This report on the handicapped population in postsecondary education is based on the National Postsecondary Student Aid Study and provides data based on the students enrolled in postsecondary institutions in the fall of 1986. At that time, over 12.5 million postsecondary students were enrolled, and of these, 1.3 million reported that they had a handicap. The most prevalent handicap reported was a visual handicap, reported by more than one-half million students. The data also indicate that a higher proportion of students at 2-year and less-than-2-year institutions were handicapped than at 4-year and above institutions. Few differences were found in the characteristics of handicapped and non-handicapped students. Most handicapped and non-handicapped students were attending school full time; most were white, non-Hispanic; and most lived off campus, not with their parents. The distributions of handicapped and non-handicapped students by major field of study were, for the most part, very similar in 1986. Handicapped students were only slightly more likely than non-handicapped students to be receiving financial aid. The report contains a section highlighting major findings, provides guidance in interpreting the data, and then presents the data (in tabular and textual forms) in three major sections concerned with incidence, characteristics, and financial aid. Technical notes on the study are appended. (DB)

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NATIONAL CENTER FOR EDUCATION STATISTICS

Survey Report June 1989

Profile of Handicapped Students in Postsecondary Education, 1987

1987 National Postsecondary Student Aid Study

Bernard Greene
Linda Zimbler
Postsecondary Education Statistics Division

Data Series:
SP–NPSAS–86/87–10

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Foreword

This report on the handicapped population in postsecondary education is one of a series of reports based on the National Postsecondary Student Aid Study (NPSAS). NPSAS is a comprehensive data collection effort conducted by the National Center for Education Statistics (NCES) in the Office of Educational Research and Improvement, U.S. Department of Education.

The primary purpose of this report is to present a profile of handicapped students in postsecondary education, including the sources and types of financial aid they receive. By providing some new insights, we hope that this descriptive report will stimulate further studies on handicapped students and discussions about how postsecondary education can best serve this special population.

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Highlights

- In the fall of 1986, over 12.5 million students were enrolled in the Nation's postsecondary institutions. Over 1.3 million of these students (10.5 percent) reported having at least one disability (table 1 and figure 1).

- A larger proportion of undergraduate students reported that they had a disability (10.8 percent) than graduate (8.4 percent) or first-professional (7.3 percent) students (figure 2).

- In the fall of 1986, most handicapped students attended school full time (62.8 percent), most were white, non-Hispanic (78.5 percent), and most lived off campus, not with their parents (55.2 percent). Similar proportions of nonhandicapped students had these characteristics (61.0, 78.2, and 53.5 percent, respectively) (table 5).

- A higher proportion of handicapped students enrolled in postsecondary institutions were male than nonhandicapped students (50.8 and 44.7 percent, respectively) (table 5).

- A higher proportion of postsecondary students who reported disabilities were veterans than students who did not report disabilities (11.4 and 6.0 percent, respectively) (table 5).

- Postsecondary students who reported disabilities tended to be older than those students who did not report disabilities. For instance, 33 percent of the handicapped students enrolled in the fall of 1986 were 30 years old or older, but only 24 percent of the nonhandicapped students were in this age group (table 5).

- Undergraduates with disabilities were more likely to receive financial aid than those without disabilities. One-half of all undergraduates who reported a disability received financial aid during the 1986-87 school year. Forty-five percent of undergraduates who did not report a disability received financial aid (table 7).

- Handicapped graduate and first-professional students were as likely to receive financial aid during the 1986-87 school year (58.2 percent) as nonhandicapped graduate and first-professional students (56.7 percent) (table 8).

- Forty-two percent of undergraduates who reported disabilities received grants, 25 percent received loans and 7 percent participated in work-study programs during the 1986-87 school year (table 7). Similar proportions of nonhandicapped students received loans (24.4 percent) and work-study (6.0 percent) during the school year; however, a smaller percentage of nonhandicapped students received grants (37.1 percent) than handicapped students (42.3 percent) (table 7).

- Approximately the same percentage of handicapped and nonhandicapped graduate and first-professional students received fellowships/grants, tuition waivers, assistantships, and loans during the school year. For instance, 27 percent of the handicapped graduate and first-professional students received fellowships/grants and 25 percent of the nonhandicapped students received this type of aid (table 8).

- Handicapped and nonhandicapped undergraduates were much more likely to receive Federal aid than State, institutional, or other aid during the school year, and a higher proportion of handicapped students received Federal aid (37.6 percent) than nonhandicapped students (34.6 percent) (table 7).

- Regardless of whether students reported that they did or did not have a handicap, postsecondary institutions were the largest source of financial aid to graduate and first-professional students in the 1986-87 school year. Over one-third of graduate and first-professional students with and without disabilities received institutional aid during the 1986-87 school year (table 8).

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Introduction

To obtain data that would address a myriad of policy and research issues surrounding postsecondary education[1] and student financial aid, the National Center for Education Statistics (NCES) established the National Postsecondary Student Aid Study (NPSAS). The NPSAS, implemented for the first time in the 1986-87 school year, is a national, student-based data system.[2] Although the impetus behind the NPSAS was to collect consistent and comprehensive data on student financial aid in postsecondary education, NPSAS includes a wealth of other data that can inform policymakers and the general public about our Nation's postsecondary students.

In general, the study identifies students enrolled in postsecondary education and obtains information on their enrollment characteristics, financial aid status, student costs of attendance, and demographic and socioeconomic characteristics. Thus, estimates of these parameters are available for the same population at the same point in time. For the 1987 NPSAS, students enrolled in the fall of 1986 were sampled.

Furthermore, NPSAS covers all postsecondary students (full-time, part-time, aided, nonaided, undergraduate, and postbaccalaureate) enrolled in institutions that range in scope from those that award doctoral degrees to those that offer programs of only 3 months duration, and institutions that are under public control, or are governed independently, either not for profit or for profit.

NPSAS also includes data on postsecondary students who are handicapped.[3] Since information on this population is limited, at best, NPSAS is a convenient vehicle for providing new insights about handicapped students.

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[1]Postsecondary education is defined as the provision of a formal instructional program whose curriculum is designed primarily for students who have completed the requirements for a high school diploma or its equivalent.

[2]The next cycle of NPSAS is scheduled for the 1989-90 school year. For a description of the NPSAS study, see the appendix, technical notes.

[3]The words handicapped and disabled are used interchangeably in this report. For a discussion on the usage of these terms, see U.S. Commission on Civil Rights, Accommodating the Spectrum of Individual Abilities, September 1983.

This report, one in a series of NCES reports based on the 1987 NPSAS,[4] focuses on a description of the handicapped population enrolled in postsecondary institutions in the fall of 1986.[5] Specifically, this report provides information on the number and characteristics of students enrolled in postsecondary institutions who reported that they had a handicap. It shows the type of postsecondary institutions handicapped students attended during the 1986-87 school year, the student's level of study, and the sources and types of financial aid received by handicapped and nonhandicapped students.

The handicapped status of students is based on data obtained from the NPSAS student questionnaires.[6] For purposes of this report, students are considered handicapped if they responded affirmatively on the NPSAS student questionnaire to having one or more of the following conditions: a specific learning disability, a visual handicap, are hard of hearing, deaf, have a speech disability, an orthopedic handicap, or a health impairment.[7]

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[4]Two other NPSAS reports are available from the Government Printing Office: Undergraduate Financing of Postsecondary Education, stock number 065-000-00337-6, for $11; and Student Financing of Graduate and Professional Education, stock number 065-000-00369-4, for $7. When ordering, send check or money order (payable to the Superintendent of Documents) to: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, and include stock number. You may also pay by VISA or MasterCard.

[5]The intent of this report is to describe selected results related to handicapped students enrolled in postsecondary institutions. Researchers interested in conducting further analyses should obtain the NPSAS Public Use Data Files available from the U.S. Department of Education, Office of Educational Research and Improvement, Information Technology Branch, 555 New Jersey Avenue NW, Washington, DC 20208-5725, (202) 357-6522.

[6]For a description of the NPSAS data instruments, see the appendix, technical notes, section II.

[7]Researchers interested in replicating the handicap variable or other variables used in this report should obtain from the authors a copy of the documentation for how these variables were constructed, U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Statistics Division, 555 New Jersey Avenue NW, Washington, DC 20208-5652.

Interpreting the 1987 NPSAS Data

Although NPSAS data on the handicapped population are fairly consistent with some existent data, the reader is cautioned about making comparisons between the NPSAS data and other data available on handicapped students. The NPSAS data may differ from other information for the following reasons. First, the NPSAS sample represents all students attending postsecondary institutions. Handicapped students attending postsecondary institutions may not be representative of handicapped individuals in the general population[8] or of other types of handicapped students. For instance, the American Council on Education's 1978 and 1985 studies on handicapped students referred to only full-time, first-time freshmen in colleges and universities.[9] A National Center for Education Statistics report based on High School and Beyond longitudinal data provided information on sophomores and seniors in high school in 1980 who identified themselves as handicapped.[10]

Second, NPSAS data on handicapped status is self-reported. Some students may overinterpret or underinterpret their physical conditions. For instance, since the NPSAS questionnaire did not specifically define what was meant by a visual handicap, students who wore glasses might have reported that they had this condition.[11] Finally, the NPSAS question on handicapped status may differ from the way it has been defined in other data sources.[12]

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[8]For instance, mentally retarded individuals are not represented in postsecondary education.

[9]American Council on Education, The Disabled College Freshman, 1978, and College Freshmen With Disabilities Preparing for Employment, 1987.

[10]U.S. Department of Education, National Center for Education Statistics, Characteristics of High School Students Who Identify Themselves as Handicapped, 1985.

[11]The 1989 NPSAS will ask the student if he or she has a visual handicap that cannot be corrected by wearing glasses.

[12]See Digest of Data on Persons With Disabilities for a discussion of the various data sources available on the handicapped population and the different ways in which surveys identify the handicapped population. Mathematica Policy Research, Inc., Digest of Data on Persons With Disabilities, reprinted with permission by the National Institute of Handicapped Research, Office of Special Education and Rehabilitative Services, U.S. Department of Education, June 1984.

To meet the vast data needs of the study most efficiently, the NPSAS relies on the use of sampling techniques. Thus, students identified for this study are a nationally representative sample of students enrolled in postsecondary institutions in the fall of 1986. All differences specifically cited in this report are statistically significant at the 0.05 level. Information regarding the accuracy of the estimates is presented in the appendix, technical notes, section III.

Handicapped Students in Postsecondary Education

In the fall of 1986, over 12.5 million students were enrolled in the Nation's postsecondary institutions (table 1). Over 1.3 million of these students (10.5 percent)[13] reported having at least one of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment (table 1 and figure 1). Most of the students who reported having a least one disability, in fact, reported having only one (figure 1).

The most prevalent disability reported by students enrolled in a postsecondary institution in the fall of 1986 was a visual handicap (table 2). Over one-half million postsecondary students reported having this condition. Visually impaired students represented 4 percent of all postsecondary students and 39 percent of all handicapped students (table 2). The least prevalent disability reported by students enrolled in a postsecondary institution in the fall of 1986 was a speech disability. Approximately 63,000 postsecondary students reported having a speech disability, which proportionately represented 0.5 percent of all postsecondary students and 5 percent of all handicapped students (table 2).

Of the more than 12.5 million students enrolled in postsecondary institutions in the fall of 1986, 11.2 million were undergraduate students, 1.1 million were graduate students, and 0.4 million were first-professional students (table 1). A larger proportion of undergraduate students reported that they had a disability (10.8 percent) than graduate (8.4 percent) or first-professional[14] (7.3 percent) students (figure 2).

A smaller proportion of students attending 4-year doctoral institutions in the fall of 1986 were handicapped than students attending 2-year and less-than-2-year institutions (table 3).[15] For instance, 9 percent of the students attending a public, 4-year doctoral institution

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[13]The American Council on Education's 1985 study indicated that 7.4 percent of full-time, first-time freshmen reported that they had a handicap. American Council on Education, College Freshmen with Disabilities Preparing for Employment, 1987.

[14]A first-professional student is defined as a student working toward a first-professional degree in one of the following areas: law, theology, chiropractic medicine, dentistry, medicine (MDs), optometry, osteopathic medicine, pharmacy, podiatry, or veterinary medicine.

[15]A similar finding was reported in the National Center for Education Statistics report, The Impact of Section 504 of the Rehabilitation Act of 1973 on American Colleges and Universities, June 1979, pp. 33-34.

Table 1.--Students enrolled in postsecondary institutions, by level of study and disability status: Fall 1986

Disability status	Postsecondary students 1/	Level of study		
		Undergraduate	Graduate	First-professional
Total	12,579,743	11,213,432	1,063,146	300,907
Disabled students 2/	1,319,229	1,208,293	89,090	21,846
Nondisabled students	11,260,514	10,005,139	974,056	279,061

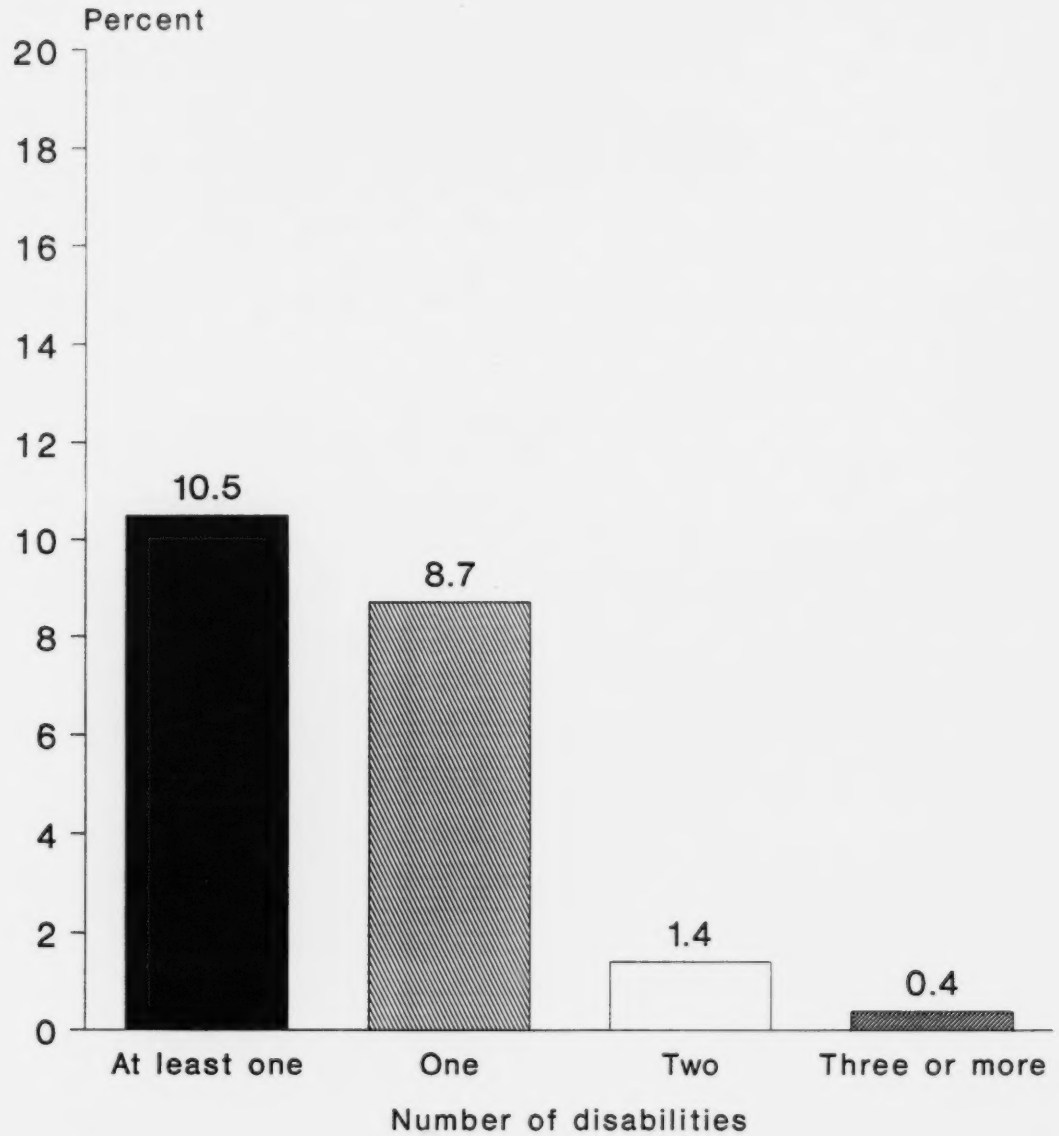
1/Includes students whose level of study was unclassified or missing.

2/Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Figure 1.--Students enrolled in postsecondary institutions, by number of reported disabilities: Fall 1986



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Table 2.--Students enrolled in postsecondary institutions, by type of disability: Fall 1986

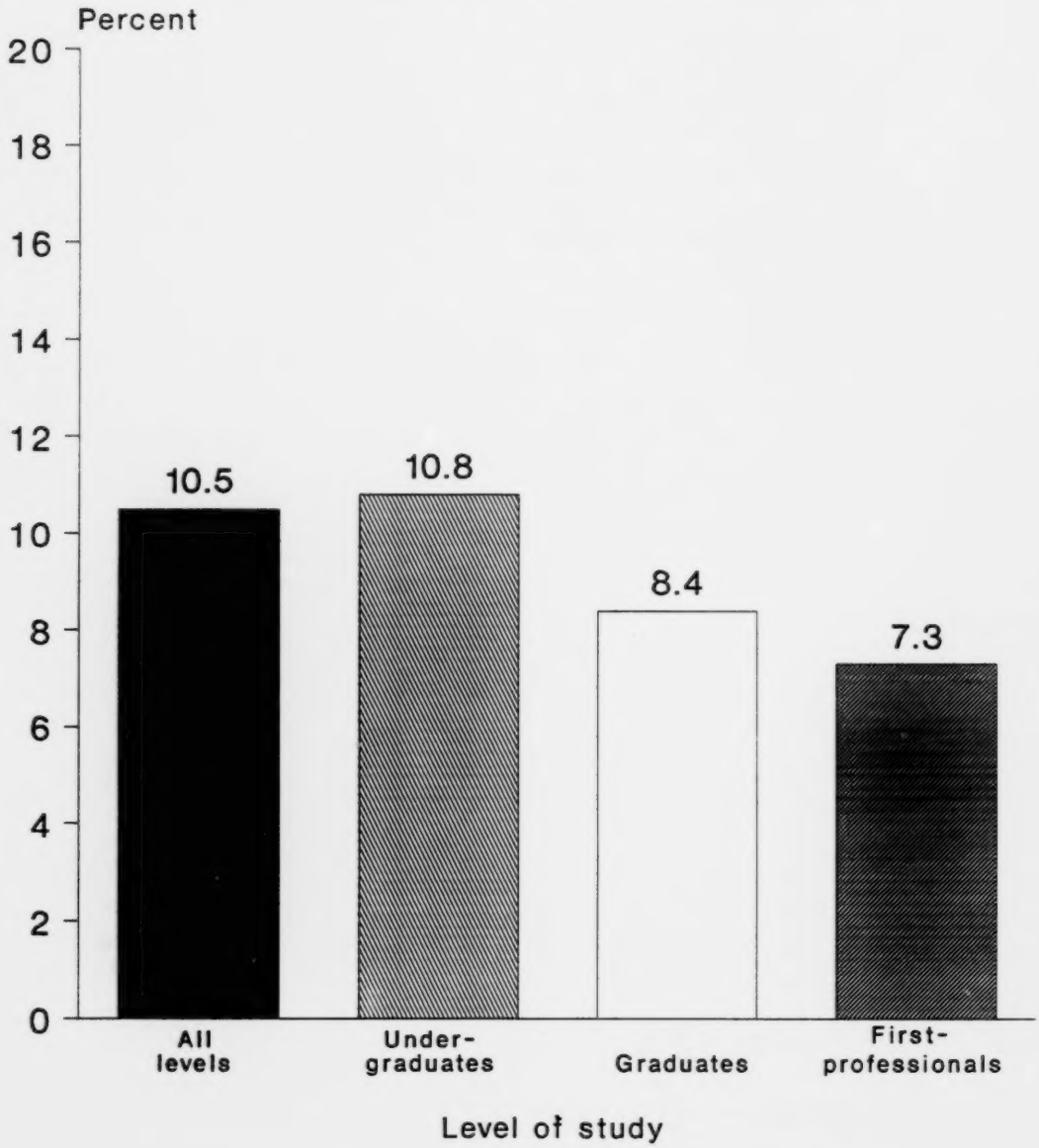
Type of disability	Number of postsecondary students	Percentage of all students	Percentage of disabled students*
Total, any disability	1,319,229	10.5	100.0
Specific learning disability	160,878	1.3	12.2
Visual handicap	514,681	4.1	39.0
Hard of hearing	265,484	2.1	20.1
Deafness	80,910	0.6	6.1
Speech disability	62,525	0.5	4.7
Orthopedic handicap	231,491	1.8	17.6
Health impairment	320,272	2.6	24.3

*Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

NOTE: Details do not add to total, since some students reported two or more disabilities.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Figure 2.--Students enrolled in postsecondary institutions who reported at least one disability, by level of study: Fall 1986



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Table 3.--Students enrolled in postsecondary institutions who reported at least one disability,* by control and level of institution: Fall 1986

Control and level of institution	Percentage of all students
All institutions	10.5
Public	10.6
4-year doctoral	9.2
Other 4-year	10.1
2-year	11.8
Less-than-2-year	14.3
Private, not-for-profit	9.6
4-year doctoral	8.6
Other 4-year	10.1
2-year	12.8
Less-than-2-year	11.6
Private, for-profit	12.9
2-year and above	11.8
Less-than-2-year	13.6

*Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

reported that they had a handicap; whereas, 14 percent of the students attending a public, less-than-2-year institution reported that they had a handicap. Since private, for-profit institutions are predominantly 2-year and less-than-2-year institutions, a larger percentage of students attending private, for-profit institutions were handicapped (12.9 percent) than students attending public (10.6 percent) or private, not-for-profit institutions (9.6 percent) (table 3).

Characteristics of the Handicapped and Nonhandicapped Postsecondary Populations

Although a larger proportion of students at private, for-profit institutions than students at public institutions reported that they had a disability (table 3), most handicapped students attended public institutions in the fall of 1986 (table 4). Seventy-five percent of the handicapped students enrolled in the fall of 1986 attended public institutions, 19 percent attended private, not-for-profit institutions, and 6 percent attended private, for-profit institutions. The enrollment patterns of nonhandicapped students by control and level of institution were similar to the enrollment patterns of handicapped students (table 4).

The data show that in the fall of 1986, most handicapped students enrolled in postsecondary institutions attended school full time (62.8 percent), most were white, non-Hispanic (78.5 percent), and most lived off campus, not with their parents (55.2 percent) (table 5). Similar proportions of nonhandicapped students had these characteristics (61.0, 78.2, and 53.5 percent, respectively) (table 5).

However, the data also show some differences in the characteristics of handicapped and nonhandicapped students in the fall of 1986. For instance, a higher proportion of handicapped students enrolled in postsecondary institutions were male than nonhandicapped students (50.8 and 44.7 percent, respectively), and a higher proportion of postsecondary students with disabilities were veterans than students without disabilities (11.4 and 6.0 percent, respectively) (table 5). Postsecondary students with disabilities also tended to be older than those students without disabilities: 33 percent of the handicapped students enrolled in the fall of 1986 were 30 years old or older, whereas, 24 percent of the nonhandicapped students were. Finally, a higher proportion of students with disabilities were undergraduates than students without disabilities (91.6 and 88.8 percent, respectively) (table 5).

Generally, in 1986 the distributions of handicapped and nonhandicapped undergraduate students by major field of study were similar. For instance, 9 percent of the handicapped and nonhandicapped undergraduates majored in education in the fall of 1986. Although similar proportions of handicapped and nonhandicapped students were pursuing majors in most of the same graduate fields, a higher proportion of graduate students without disabilities majored in business (21.4 percent) than students with disabilities (13.6 percent) (table 6).

Proportionally, very few postsecondary students were pursuing a first-professional degree in the fall of 1986, and even fewer students with disabilities were pursuing this type of degree (table 1). However, of the students who were pursuing a first-professional degree in the fall of 1986, a higher proportion of handicapped students were majoring in law (49.9 percent) than nonhandicapped students (38.9 percent), while a lower proportion of handicapped students were majoring in medicine (25.4 percent) than nonhandicapped students (38.6 percent) (table 6).

Table 4.--Students enrolled in postsecondary institutions, by disability status and control and level of institution: Fall 1986

Control and level of institution	Disabled students*	Nondisabled students
Total postsecondary students	1,319,229	11,260,514
	(Percent)	
All institutions	100.0	100.0
Public	75.0	74.2
4-year doctoral	22.1	25.5
Other 4-year	14.3	14.9
2-year	37.2	32.8
Less-than-2-year	1.4	1.0
Private, not-for-profit	19.1	21.2
4-year doctoral	8.3	10.2
Other 4-year	9.4	9.8
2-year	1.3	1.1
Less-than-2-year	0.1	0.1
Private, for-profit	5.9	4.7
2-year and above	2.0	1.8
Less-than-2-year	3.9	2.9

*Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Table 5.--Students enrolled in postsecondary institutions, by disability status and selected student characteristic: Fall 1986

Selected student characteristic	Disabled students*	Nondisabled students
Total postsecondary students	1,319,229	11,260,514
	(Percent)	
Total	100.0	100.0
Sex		
Male	50.8	44.7
Female	49.2	55.3
Race/ethnicity		
American Indian	1.9	0.8
Asian American	4.1	5.5
Black, non-Hispanic	8.0	9.0
Hispanic	7.5	6.5
White, non-Hispanic	78.5	78.2
Age		
15 to 23	49.8	55.8
24 to 29	17.5	19.8
30 or older	32.7	24.4
Marital status		
Single, never married	62.0	66.2
Married	27.2	26.5
Separated	2.1	1.4
Divorced	7.4	5.4
Widowed	1.3	0.5
Attendance status		
Full-time	62.8	61.0
Part-time	37.2	39.0
Dependency status		
Dependent	55.9	59.5
Independent	44.1	40.5
Citizenship		
U.S. citizen	96.2	94.1
Not U.S. citizen	3.8	5.9
Housing status		
School-owned	19.1	18.9
Off-campus, not with parents	55.2	53.5
With parents	25.7	27.6
Level of study		
Undergraduate	91.6	88.8
Graduate	6.8	8.7
First-professional	1.6	2.5
Veteran status		
Veteran	11.4	6.0
Not veteran	88.6	94.0
High school education		
Diploma	86.7	91.7
GED or equivalency test	7.6	3.9
Certificate of completion	2.2	2.1
Did not complete high school	3.6	2.2

*Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Table 6.--Students enrolled in postsecondary institutions, by disability status, level of study, and major field of study: Fall 1986

Level and major field of study	Disabled students 1/	Nondisabled students
Total postsecondary students	1,319,229	11,260,514
	(Percent)	
Undergraduates	100.0	100.0
Arts and humanities	7.4	6.4
Business	24.4	28.1
Education	9.3	8.6
Engineering	9.8	9.5
Health	7.8	9.7
Liberal/general studies	7.3	6.9
Natural sciences 2/	10.7	10.7
Social sciences	8.6	7.3
Trade/industrial	3.2	2.5
All other	11.4	10.4
Graduates	100.0	100.0
Arts and humanities	10.7	9.6
Business	13.6	21.4
Education	25.4	22.4
Engineering	4.6	6.4
Natural sciences 2/	10.2	12.0
Social sciences	9.9	9.5
All other	25.6	18.7
First-professionals	100.0	100.0
Law	49.9	38.9
Medicine	25.4	38.6
Other medical 3/	19.9	17.5
Theology	4.8	4.9

1/Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

2/Comprises students who majored in life sciences, physical sciences, mathematics, or computer sciences.

3/Comprises chiropractic medicine, dentistry, optometry, osteopathic medicine, pharmacy, podiatry, and veterinary medicine.

NOTE: Details may not add to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Student Financial Aid to the Handicapped and the Nonhandicapped Postsecondary Populations

Postsecondary students receive financial aid from a variety of sources, including the Federal Government, States, postsecondary institutions, employers, and other sources (e.g., private organizations). These sources of financial aid provide different types of aid to students. Students may receive financial aid that is considered a gift (e.g., grants, scholarships, fellowships, employer benefits, tuition waivers), financial aid that requires the student to work in order to receive it (e.g., work-study, assistantships), and financial aid that the student must repay at some later date (e.g., loans).

Undergraduate students usually receive one of three types of financial aid: grants, loans, or work-study. At the undergraduate level, most aid is provided on the basis of the financial need of the family.[16] The more financial need a student demonstrates, the more likely that he or she will receive financial aid, especially Federal financial aid.[17] It is possible at the undergraduate level to receive aid based on merit, although students who receive merit-based aid may also have financial need.

Graduate and first-professional students are more likely than undergraduate students to receive aid based on merit.[18] Graduate and first-professional students receive fellowships, tuition waivers, and assistantships that are partially or solely based on merit.[19] For the purposes of this report, graduate and first-professional aid is classified as fellowships/grants (including employer benefits), tuition waivers, assistantships (including work-study), and loans.

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[16]For students who are dependent on their family for financial support, need is based on the financial condition of the student and his or her parents. For students who are independent of their parents for their financial support, need is based on the financial condition of the student only.

[17]For a more detailed discussion on student financial aid provided to undergraduates, see U.S. Department of Education, National Center for Education Statistics, Undergraduate Financing of Postsecondary Education: A Report of the 1987 National Postsecondary Student Aid Study, June 1988.

[18]Arthur M. Hauptman, Students in Graduate and Professional Education: What We Know and Need to Know (Washington, D.C.: The Association of American Universities, 1986), pp. 55-57.

[19]Ibid., pp. 57-67.

Undergraduates with disabilities were more likely to receive financial aid than undergraduates without disabilities. One-half of all undergraduates with a disability received financial aid during the 1986-87 school year; whereas, 45 percent of undergraduates without a disability received financial aid (table 7). The average amount of aid received by aided handicapped and nonhandicapped students was similar (figure 3). For instance, the average amount of aid received by full-time undergraduates with a disability was approximately $3,700; for full-time undergraduates without a disability, it was approximately $3,800 (figure 3).

Forty-two percent of undergraduates with disabilities received grants, 25 percent received loans, and 7 percent participated in work-study programs during the 1986-87 school year (table 7).[20] Similar proportions of nonhandicapped students received loans (24.4 percent) and work-study (6.0 percent) during the school year; however, a smaller percentage of nonhandicapped students received grants (37.1 percent) than handicapped students (42.3 percent) (table 7). Handicapped and nonhandicapped undergraduates were much more likely to receive Federal aid during the school year than State, institutional, or other aid, and a higher proportion of handicapped students received Federal aid (37.6 percent) than nonhandicapped students (34.6 percent) (table 7).

The percentage of handicapped graduate and first-professional students who received financial aid during the 1986-87 school year (58.2 percent) was similar to the percentage of nonhandicapped graduate and first-professional students (56.7 percent) (table 8). Looking at the type of aid graduate and first-professional students received indicates that approximately the same percentage of handicapped and nonhandicapped students received fellowships/grants, tuition waivers, assistantships, and loans during the school year. For instance, 27 percent of the handicapped graduate and first-professional students received fellowships/grants and 25 percent of the nonhandicapped students received this type of aid (table 8).

Regardless of whether students reported that they did or did not have a handicap, postsecondary institutions were the largest source of financial aid to graduate and first-professional students in the 1986-87 school year. Over one-third of graduate and first-professional students with and without disabilities received institutional aid during the 1986-87 school year (table 8).

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[20]Percentages may add to more than the percentage receiving any aid, since a student may have received more than one type of aid.

Table 7.--Undergraduate students enrolled in postsecondary institutions, by disability status and type and source of financial aid: Fall 1986

Type and source of financial aid	Disabled students 1/	Nondisabled students
Total undergraduates	1,208,293	10,005,139
	(Percent)	
Any aid 2/	49.5	45.0
Type of aid		
Grants	42.3	37.1
Loans	24.9	24.4
Work-study	7.0	6.0
Source of aid		
Federal	37.6	34.6
State	16.8	14.5
Institutional	14.0	14.1
Other	8.1	6.7

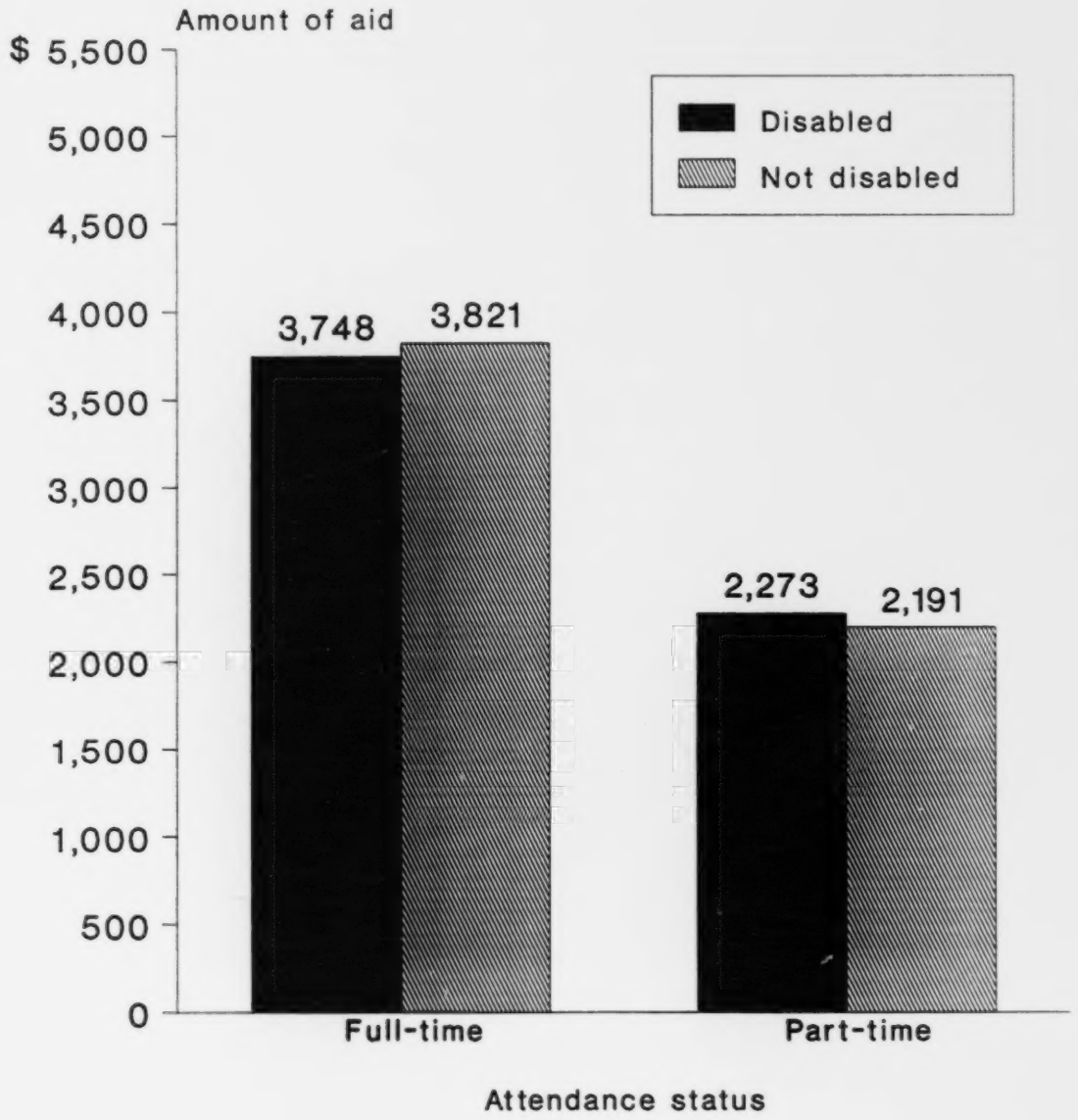
1/Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

2/Includes students who reported they were awarded aid but were not specific about the source or type of aid.

NOTE: Percents added across the various sources or types of aid may total more than the percent of those who received any aid, because some students received multiple types or sources of aid.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Figure 3.--Average amount of financial aid awarded to aided undergraduates, by attendance and disability status: Fall 1986



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Table 8.--Graduate and first-professional students enrolled in postsecondary institutions, by disability status and type and source of financial aid: Fall 1986

Type and source of financial aid	Disabled students 1/	Nondisabled students
Total graduate and first-professional students	110,936	1,253,117
	(Percent)	
Any aid 2/	58.2	56.7
Type of aid		
Fellowships/grants 3/	27.2	25.0
Tuition waivers	19.7	17.4
Assistantships 4/	22.2	20.1
Loans	27.4	26.4
Source of aid		
Federal	26.9	27.4
State	6.0	5.9
Institutional	37.6	34.6
Employer	7.1	7.4
Other	5.4	3.7

1/Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

2/Includes students who reported they were awarded aid but were not specific about the source or type of aid.

3/Includes students who received employer benefits.

4/Includes students who received teaching or research assistantships, participated in work-study, or both.

NOTE: Percents added across the various sources or types of aid may total more than the percent of those who received any aid, because some students received multiple types or sources of aid.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Summary

This report provides information on handicapped students enrolled in postsecondary institutions in the fall of 1986. The data indicate that over 1.3 million postsecondary students reported that they had a handicap in 1986. The most prevalent handicap reported by students was a visual handicap, which was reported by more than one-half million students. The data indicate that a higher proportion of students at 2-year and less-than-2-year institutions were handicapped than at 4-year and above institutions.

It is interesting to note that when the characteristics of handicapped postsecondary students were compared with those of nonhandicapped postsecondary students, few, if any, differences were found. Most handicapped and nonhandicapped students were attending school full time in the fall of 1986, most were white, non-Hispanic, and most lived off campus, not with their parents. The data show that the distributions of handicapped and nonhandicapped students by major field of study were, for the most part, very similar in 1986. Finally, the data presented in this report indicate that handicapped students were only slightly more likely to receive financial aid during the 1986-87 school year than nonhandicapped students.

Appendix

Technical Notes

The 1987 National Postsecondary Student Aid Study (NPSAS) was conducted during the 1986-87 school year after an extensive national field test in 1985-86. The full-scale study involved 59,886 postsecondary students selected from 1,074 postsecondary institutions.

I. Sample Design

Students were selected for the 1987 NPSAS as the third stage in a three-stage sample design. The first stage of sampling consisted of selecting geographic areas based upon three-digit zip code areas. The largest primary sampling units (PSUs) were selected with certainty. Of the 361 PSUs in the universe, the 50 largest PSUs were included in the sample with certainty. The remaining PSUs were stratified on the basis of the State in which the PSU was located, and 70 PSUs were selected with probability proportional to their measure of size, i.e., the total number of students enrolled in postsecondary education.

Institution sampling

Once the 120 PSUs were selected, the second stage of the sample selection process was the selection of institutions within selected PSUs. A total of 7,814 schools was identified in the 120 sample PSUs.

Institutions in these 120 PSUs were then classified into 10 strata for sample selection, based upon the control of the institution (public; private, not-for-profit; and private, for-profit) and type (highest degree awarded). Five hundred and eight institutions were large enough to be selected with certainty. The remaining institutions were sampled within strata with probability proportional to the total enrollment in the institution.

A total of 1,342 institutions and branch campuses was selected. A special supplemental sample was designed for New York State after the national sample of schools had already been selected, which added an additional 11 campuses and increased the number of sample institutions to 1,353.

Ninety-two percent of the sampled institutions agreed to participate in the study. When participating institutions were weighted to reflect total enrollment, the final weighted institutional response rate was 94.6 percent.

Student sampling

The third stage of the sampling process was the selection of students within participating institutions. Institutions were asked for a list of all students enrolled on or about October 15, 1986. All students enrolled in courses for credit, in a degree or formal award program, or in a vocational or occupationally-specific program were eligible for selection, including part-time and full-time students and aided and nonaided students. If a student was also in a high school program, he or she was not eligible.

Students were stratified by level (undergraduate, graduate, and first-professional) and systematically sampled, using a random start and a prespecified sampling rate that varied by student level. Sampling rates for graduate and first-professional students were 3 to 7 times the rate for undergraduate students, resulting in a total student sample of 59,886.

II. Data Sources

The data in this report were obtained from multiple sources. Once a student sample was identified at an institution, fall 1986 enrollment data on each sampled member were obtained from administrative records from December 1986 through March 1987. For each sample member with a financial aid record, the aid record was obtained at this time and subsequently updated in the summer of 1987 at the end of the 1986-87 Federal financial aid program fiscal year. These updated records reflected aid award status and amounts for the entire 1986-87 school year.

In March, 1987, each of the 59,886 students sampled for the NPSAS was sent a questionnaire to his or her school, or local address as identified in the institution's registration records. After significant followup attempts were made by mail, all nonrespondents to the mail survey were targeted for telephone interviews that encompassed all but five items in the mail questionnaire. The overall response rate across all levels of students and type and control of institutions in the sample was 72 percent, resulting in an unweighted sample size of 43,176.

In addition to extensive editing of the student questionnaire data, a significant amount of telephone followup to retrieve missing or out-of-range responses on 21 key items was carried out. These key items included sources of financial support, education expense items, items to define dependency status, and the financial condition variables for students identified as independent. Over 14,000 students were contacted for data retrieval.

III. Estimation Weights

The production of student-level estimates was accomplished in steps. First, student-level estimates were obtained by using weights that reflected the probability of a student's being selected for the NPSAS sample. Since the student was selected in a multistage manner, the

student weight was the product of the reciprocals of the probabilities of selection at each stage. For the student questionnaire, data nonresponse adjustments were made for institution nonresponse (that is, refusal to participate in NPSAS) and student nonresponse.

A ratio adjustment technique was used to adjust for institution nonresponse. The 1986-87 Integrated Postsecondary Education Data System (IPEDS) file was the source used for the ratio adjustment. For institutions that could not be matched to the IPEDS file, a simple nonresponse adjustment factor (the inverse of the weighted-response rate within stratum) was used.

To account for nonresponse on the student questionnaire, the initial student weight (the product of the adjusted institution weight and the inverse of the probability of selection of the student within the institution) was adjusted by the inverse of the weighted student response rate. These student questionnaire weights were used to produce the national estimates of the number of students by their characteristics presented in this report.

Accuracy of estimates

The estimates in this report are subject to sampling and nonsampling error. Nonsampling error can be attributed to a number of sources: inability to obtain complete information about all students in all schools in the sample (such as, some students or schools refused to participate, or students participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and estimating missing data.

Sampling error arises because a sample of individuals was selected from a population and used to make inferences about the population. Estimates derived from one sample differ from estimates derived from another sample drawn from the same population in the same way. These differences result from sampling variability. There are a number of methods for computing estimates of the sampling variability of the statistics produced from complex sample designs (that is, multistage, stratified, cluster samples with varying probabilities of selection) such as that used for NPSAS. A stratified, jackknife replicate approach was chosen for NPSAS.

One measure of sampling error is the coefficient of variation (CV), which is the standard error of an estimate, divided by the estimate. The CV represents the variability of an estimate expressed as a percent of the estimate. This has the effect of standardizing the variation in terms of units and orders of magnitude. Estimated CVs can be used to determine the standard error of an estimate. For example, 75 percent of postsecondary students who reported disabilities attended public institutions in the fall of 1986. The estimated CV of this estimate is .017. To calculate the standard error of the estimated proportion of disabled students

attending public institutions, the CV is multiplied by the estimate: .017(.750)=.0128. This standard error may then be used to establish a confidence interval around the estimate. To establish the 95 percent confidence interval around the proportion of disabled students attending public institutions, the standard error is multiplied by 1.96: .0128(1.96)=.0251. The resulting value is then added to the estimate (.750+.0251) and subtracted from the estimate (.750-.0251). This procedure yields a confidence interval (.7249 to .7751) which would contain the "true" proportion of disabled students attending public institutions in 95 percent of the samples that might have been drawn from the population of disabled students enrolled in the fall of 1986. Coefficients of variation for selected characteristics are presented in tables A.1 and A.2. CVs for all other estimates presented in the report are available on request.

Analytic methodology

All univariate comparisons cited in the text of this report are significant at or beyond the .05 level as determined by pairwise t-tests for independent samples. The level of significance used in making comparisons was adjusted for the number of comparisons made within a "family" of comparisons defined as either the row or column variable. Adjustments were made using a Bonferroni adjustment to preclude the possibility of some comparisons being significant by chance alone.

All entries in the tables were based on at least 30 unweighted cases. Tables A.3 and A.4 present unweighted numbers of individuals in the NPSAS, by selected characteristics. Percentage distributions developed for this report and total numbers of students by individual characteristics were based on the number of cases for whom data were available for the variable(s) of interest.

IV. Variables Used in the Report

Since there may be as many as three data sources for a particular student in the NPSAS, the database is fairly complex. Using it to produce national estimates and comparative analytic results requires decisions not only on which variables to use and how each variable will be treated, but also how these variables will be operationally defined and which source of data is the best for a given variable. The complexity of the database is compounded by the diversity inherent in postsecondary education, among institutions and among students who attend these institutions.

See Undergraduate Financing of Postsecondary Education and Student Financing of Graduate and Professional Education for a discussion on how the variables presented in this report were operationally defined, the primary and secondary data sources used for a particular variable, imputation strategies followed, adjustments made to the data to provide comparable statistics across students with vastly different enrollment characteristics from institutions with differing operating characteristics, and the treatment of each variable in computing percentages or mean values, as appropriate. (See footnote 4 for ordering information.)

Table A.1.--Coefficients of variation for students enrolled in postsecondary institutions, by disability status and control and level of institution: Fall 1986

Control and level of institution	Disabled students*	Nondisabled students
All institutions	.008	.003
Public	.017	.019
4-year doctoral	.078	.064
Other 4-year	.092	.079
2-year	.060	.055
Less-than-2-year	.321	.270
Private, not-for-profit	.062	.067
4-year doctoral	.091	.085
Other 4-year	.104	.118
2-year	.292	.210
Less-than-2-year	.500	.400
Private, for-profit	.100	.085
2-year and above	.147	.131
Less-than-2-year	.138	.121

*Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Table A.2.--Coefficients of variation for students enrolled in postsecondary institutions, by disability status and selected student characteristic: Fall 1986

Selected student characteristic	Disabled students*	Nondisabled students
Total postsecondary students	.008	.003
Sex		
Male	.022	.010
Female	.022	.008
Age		
15 to 23	.021	.013
24 to 29	.051	.020
30 or older	.030	.020
Attendance status		
Full-time	.020	.016
Part-time	.035	.026
Level of study		
Undergraduate	.006	.007
Graduate	.074	.043
First-professional	.159	.224

*Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Table A.3.--Unweighted sample sizes for students enrolled in postsecondary institutions, by disability status and control and level of institution: Fall 1986

Control and level of institution	Disabled students*	Nondisabled students
All institutions	4,338	38,838
Public	2,099	18,946
4-year doctoral	897	9,099
Other 4-year	622	5,599
2-year	509	3,803
Less-than-2-year	71	445
Private, not-for-profit	1,733	16,439
4-year doctoral	848	8,764
Other 4-year	684	6,038
2-year	168	1,355
Less-than-2-year	33	282
Private, for-profit	506	3,453
2-year and above	190	1,411
Less-than-2-year	316	2,042

*Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

Table A.4.--Unweighted sample sizes for students enrolled in postsecondary institutions, by disability status and selected student characteristic: Fall 1986

Selected student characteristic	Disabled students*	Nondisabled students
Total postsecondary students	4,338	38,838
Sex		
Male	2,177	17,826
Female	2,161	21,012
Age		
15 to 23	2,386	22,508
24 to 29	755	7,962
30 or older	1,197	8,368
Attendance status		
Full-time	3,232	28,274
Part-time	1,106	10,564
Level of study		
Undergraduate	3,667	31,215
Graduate	411	4,728
First-professional	260	2,895

*Comprises students who reported that they had one or more of the following conditions: a specific learning disability, a visual handicap, hard of hearing, deafness, a speech disability, an orthopedic handicap, or a health impairment.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1987 National Postsecondary Student Aid Study.

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